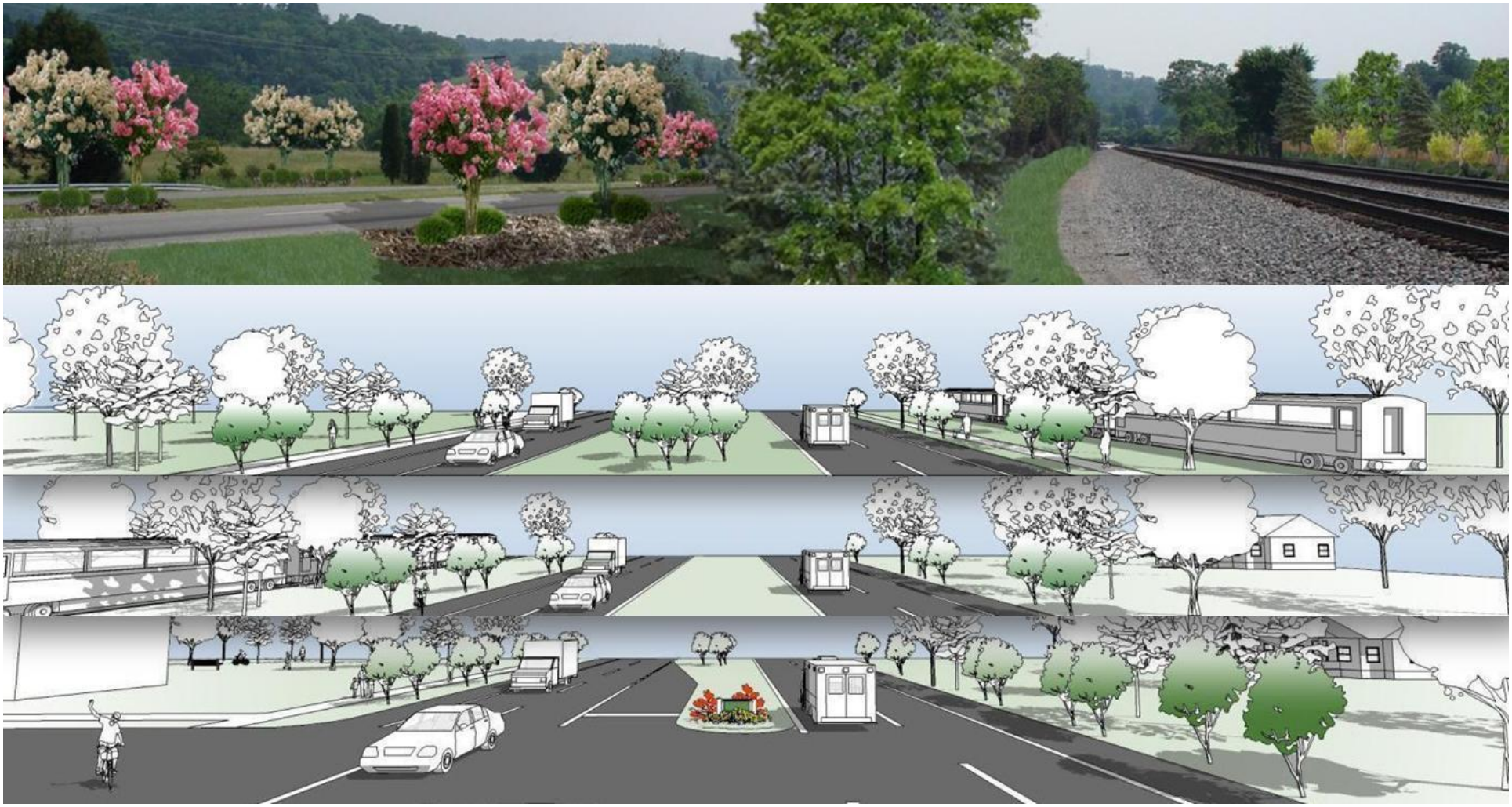
LAFAYETTE ROUTE 11/460 CORRIDOR PLAN



Prepared for Montgomery County, Virginia

March 12, 2012

Prepared by Renaissance Planning Group

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INTRODUCTION

Background

The Route 11/460 Roanoke Road Corridor is a key Eastern gateway to Montgomery County. Over the years a number of planning efforts have helped to establish a vision for the general area and the nearby villages of Elliston and Lafayette, but none has specifically addressed a vision for this important roadway.

In 2007, the County adopted the Lafayette & Elliston Village Plan, which created a specific future land use plan for the villages and village expansion areas and established a vision for growth and development through 2030. The plan highlighted the need for increased economic development, improved multimodal transportation options, historic preservation, natural resource protection and increased recreational activities. In that same year, the County also adopted the Village Transportation Links Plan, which created a vision for non-motorized transportation access and mobility within and between each of the County's designated villages. The Route 11/460 Corridor Plan builds on the policy framework of these past planning efforts to clarify the corridor design and transportation planning principles intended for this portion of the11/460 corridor.

Today, Route 11/460 is a highway with moderately growing traffic that passes through rural and natural areas, historic villages, and commercial and industrial businesses. Ready access to Interstate 81, proximity to businesses, and regional commuting patterns make the Route 11/460 Roanoke Road Corridor a desirable business location. These same qualities, as well as the relatively flat topography in this portion of the corridor, make it a desirable location for economic development. As the County grows, there will likely be additional pressure for more housing and business uses along the Corridor.

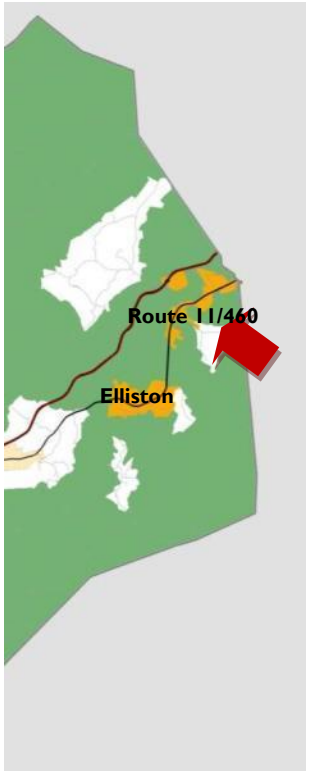


Figure 1. General location of study area within County

PLANNING CONTEXT

In 2010, the Virginia Department of Transportation ("VDOT") created the Urban Development Area Local Government Assistance Program, to assist communities in revising their planning and policy frameworks to comply with the Urban Development Area legislation (Section 15.2-2223.1 of the Code of Virginia). Montgomery County was awarded a Tier II grant within this program and funding for this study was provided under that grant program.

Purpose of the Route 11/460 Corridor Plan

The overall goal of the Lafayette Route 11/460 Corridor Plan is to develop an updated **long range vision** and **conceptual plan** for the corridor. The purpose is to anticipate and prepare for change and capitalize on future opportunities as the corridor develops over time.

Planning Process

On June 8, 2011, Montgomery County hosted a series of planning meetings for the Route 11/460 Corridor Plan. Staffed and facilitated by a team of professional planners and designers led by Renaissance Planning Group, the meetings included a work session with County, MPO, PDC and VDOT staff, a public work session with property owners along the corridor, and a presentation/work session with the Montgomery County Planning Commission. At these work sessions, held at Montgomery County's Government Center, participants provided suggestions on their issues, concerns and desires for the Route 11/460 Corridor in the future.

Incorporating the perspectives and priorities of the people who live, work and do business along the corridor was a critical component in the development of the Route 11/460 Corridor Plan. The workshop results helped shape the ideas and principles that ultimately went into refined Corridor Land Use and Design Concept embodied in this Corridor Plan. The following section includes a brief description of the discussion themes expressed during the June 8 workshops and in discussions with stakeholders and community leaders.

What we heard

During the June 8 work sessions, several ideas emerged as common themes for what property owners and local officials and staff generally like about the corridor, what they generally don't like, and what they would like for the corridor in the future.

Following are a few key issues derived from these work sessions - more detailed input summaries from each session are in the appendix to this report.

PROPERTY OWNERS:

- Concerned about roadway safety for all users
- Need for better/higher paying jobs

- Existing high speeds are a problem for bike/ped safety
- Interest in additional business and commerce to build tax base
- Need to screen visual impacts of uses not consistent with existing rural character

PLANNING COMMISSION:

- Need to provide safe bike/pedestrian access in the area - see people walking and biking every day along the corridor
- Road speeds are a problem for bike/ped safety; the roads are currently designed for higher speeds
- Concern over impacts from proposed Intermodal use
- Interest in economic development but also protecting scenic quality of county's "gateway

Key Issues

Based on the input received on June 8, a set of key issues emerged. These issues were distilled from the multiple comments and suggestions made, and reflect a broad summary of points from the work sessions as a whole. All of these issues were reviewed by participants at the second series of workshops and were acknowledged as being key considerations which need to be balanced as the corridor plan takes shape.

Key Issues

1. Support economic development opportunities
2. Improve the safety of Route 460 for all users
3. Maintain or enhance the scenic quality of the corridor

Follow Up Work Sessions

A second public meeting and series of work sessions were held on August 10, 2011 where participants were asked to review and provide comment on the proposed land use and corridor design concepts, as well as transportation recommendations. Specifically, participants were asked to discuss general issues and opportunities, potential benefits or concerns for the property owner and County, hopes for the future of the area, and priorities for implementation. The comments form those work sessions were used to inform the final recommendations contained in this study. The summary from that meeting can be found in the appendix.

Key Issues

1. ***Supporting economic development opportunities***
2. ***Improving the safety of Route 460 for all users***
3. ***Maintain or enhance the scenic quality of the corridor***

Existing Conditions Analysis

Prior to the June 8 work sessions, the consultant team conducted a brief analysis of existing conditions, regional trends and other factors that could influence the future development and evolution of the Route 11/460 Corridor. Some of the results of this analysis are summarized below and in the section that follows. In addition to those summarized in the report, the following plans/studies were also reviewed for this planning effort:

- Montgomery County Comprehensive Plan
- Virginia Tech Villages Study
- Roanoke County: Glenvar Plan
- Wilderness Road initiative

Study Area

The study area encompasses the land around the Route 11/460 Corridor that runs from the Roanoke County line to the intersection with the Norfolk Southern Railroad . The map shows the important destinations within the study area including Rowe Furniture, the Fire Department, Elliston-Lafayette Elementary School, and the Village of Lafayette.

Existing zoning

The study area is primarily zoned A-1 agriculture. Two larger parcels are zoned Planned Industrial and Manufacturing and a number of smaller parcels are zoned general business.

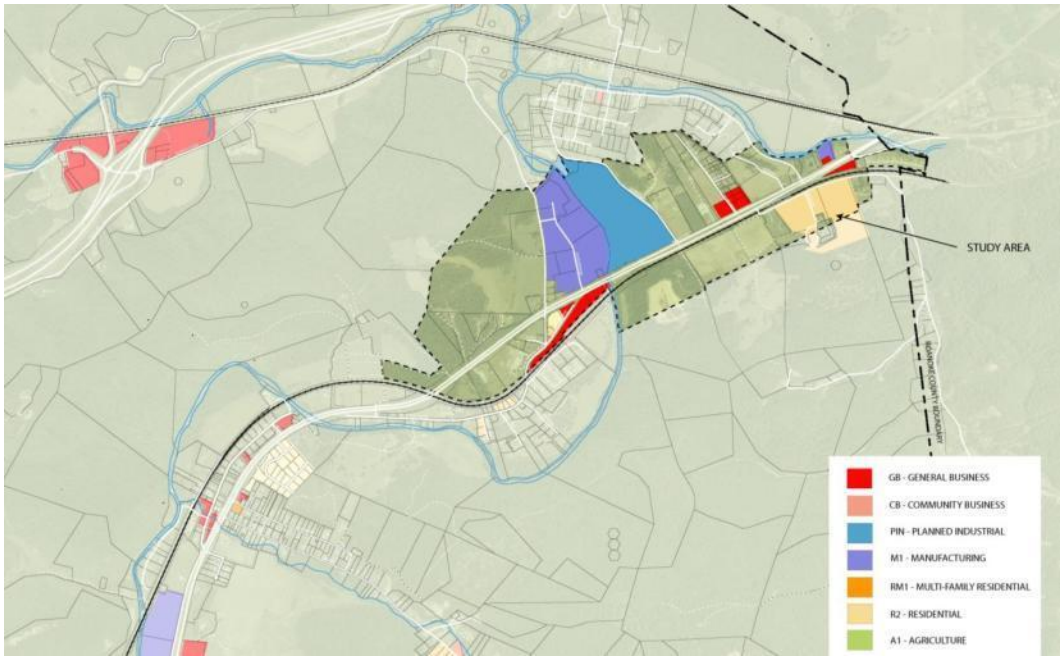


Figure 2. Map of Existing Zoning

Topography

The eastern portion of the County has significant topography with large amounts of land in steep slopes that are greater than 20%. The study area, however, is relatively flat in comparison.

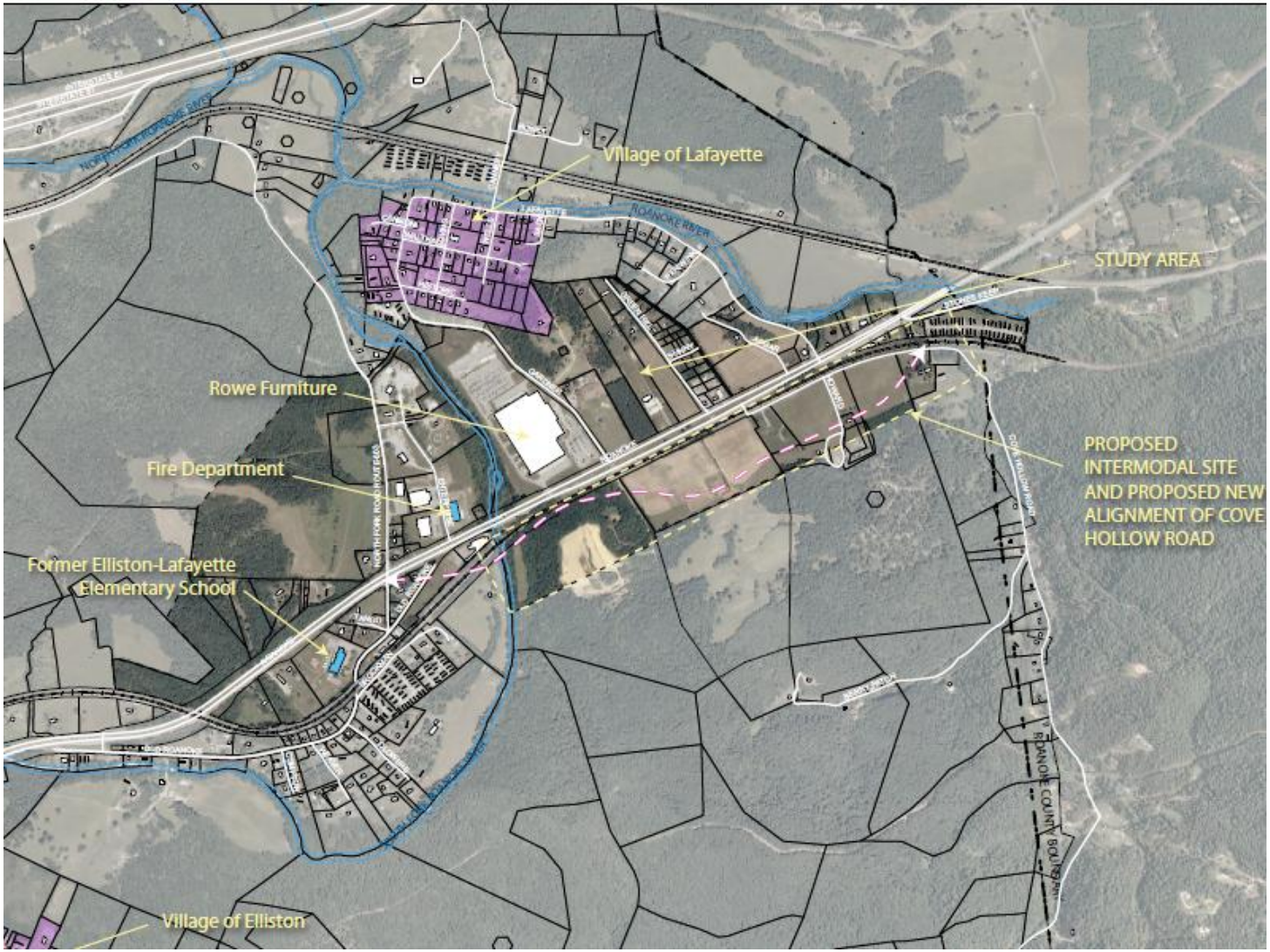


Figure 3. Map of Existing Conditions in the Study Area

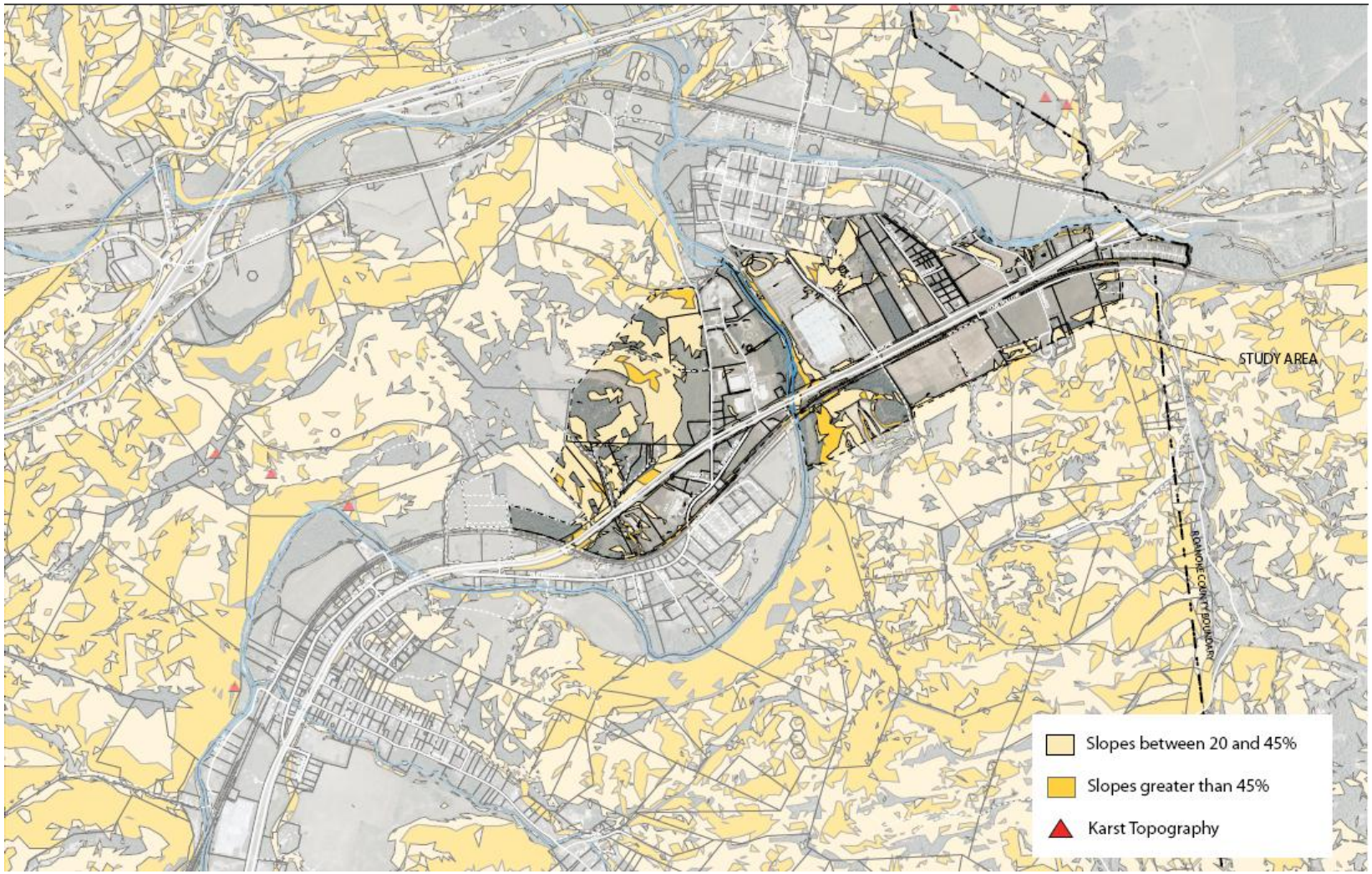


Figure 4. Existing Topography

Elliston and Lafayette Village Plan

In 2007, the County adopted the Lafayette & Elliston Village Plan, which created a specific future land use plan for the villages and village expansion areas and established a vision for growth and development through 2030. The plan highlighted the need for increased economic development, improved multimodal transportation options, historic preservation, natural resource protection and increased recreational activities.

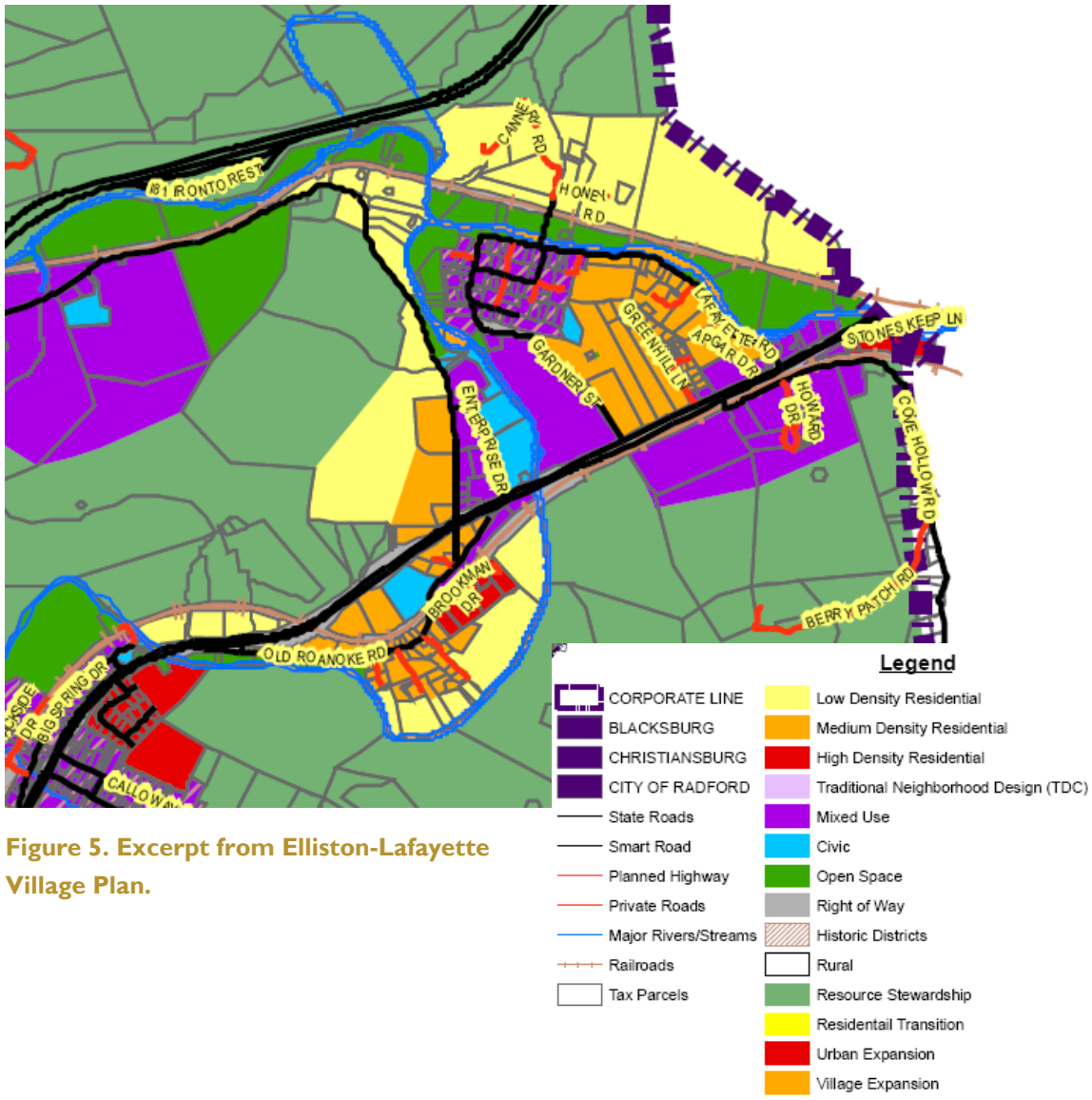


Figure 5. Excerpt from Elliston-Lafayette Village Plan.

Village Transportation Links Plan (VITL)

The Village Transportation Links (VITL) Plan created a vision for non-motorized transportation access and mobility within and between each of the County's designated villages. The VITL concept for Elliston and Lafayette incorporated the natural and historic features that make these villages unique. The basic framework includes:

1. Creating a parallel system of trails and greenways along historic road alignments to link the two villages without having to rely on Route 11/460

2. Incorporating paved shoulders and buffered sidewalks along Route 11/460 within specific areas of the villages to provide direct access between key destinations

3. Signing lower volume residential roads with "share the road" designations to improve visibility of bicyclists and pedestrians

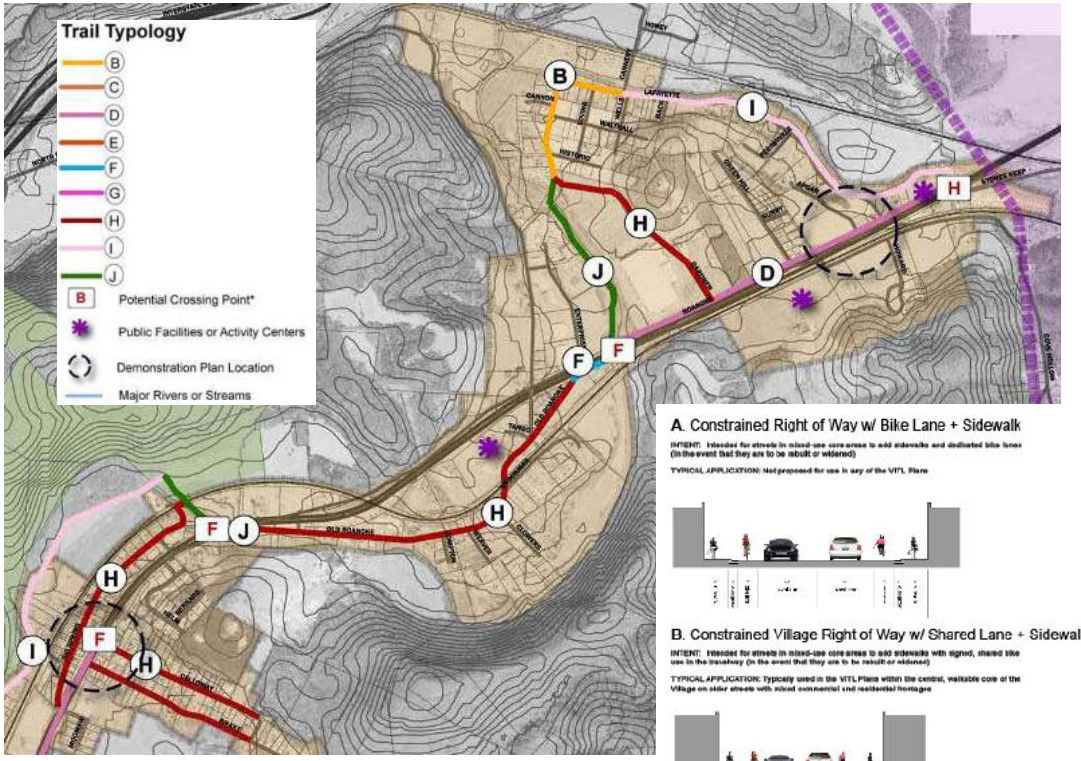
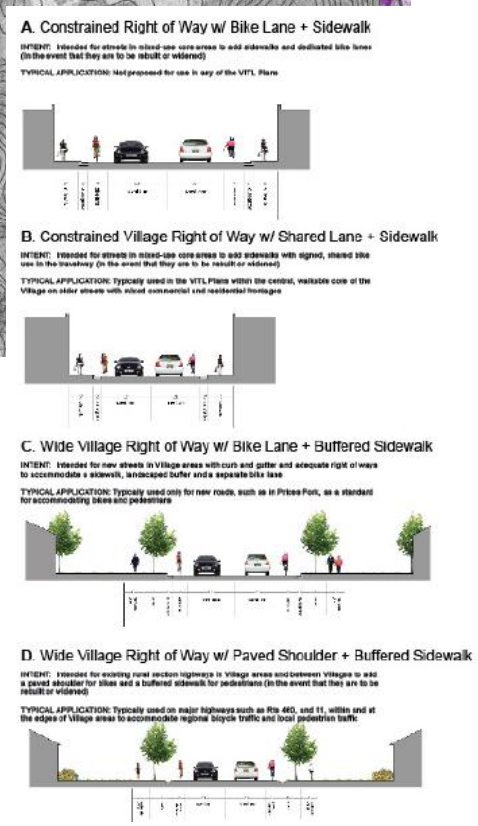


Figure 6. Excerpt from Village Transportation Links (VITL) Plan



New River Valley Regional Bikeway, Walkway, Blueway Plan (2011 DRAFT)

The New River Valley Planning District Commission is currently in the process of updating and revising the 2000 Regional Bikeway, Walkway, Blueway Plan. The updated plan includes information on existing recreational opportunities and future planned projects. The following are priorities from the draft plan that relate to the Route 11/460 Corridor study area:

1. Connections east – to the Roanoke Greenway.

2. Developing dedicated access to waterways – creating a Blueway system.

3. Developing community trail systems in the Towns and Villages.

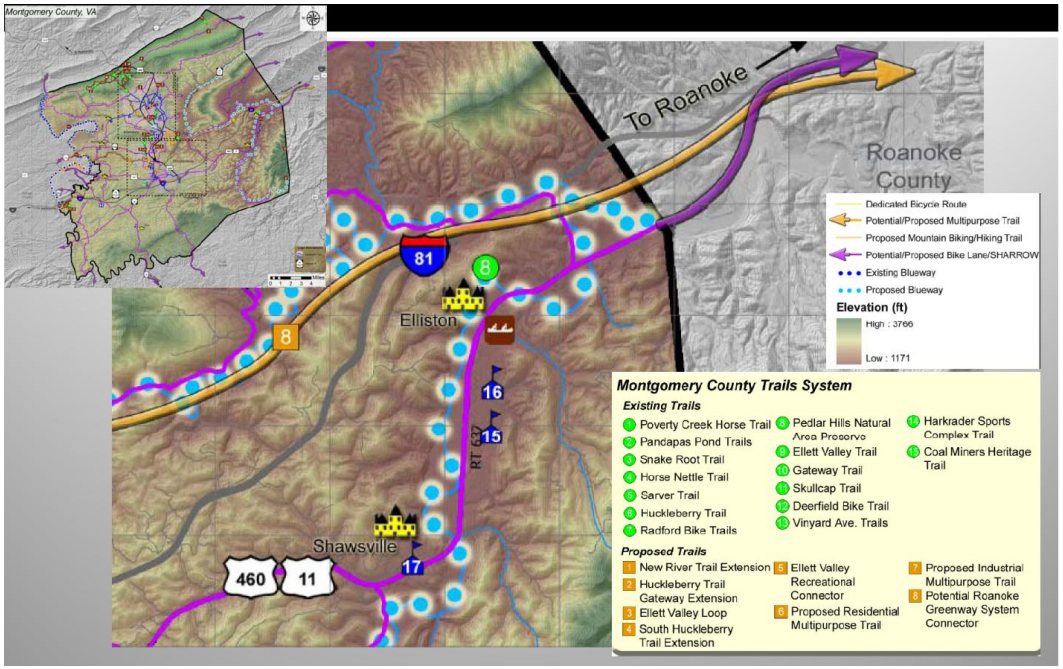
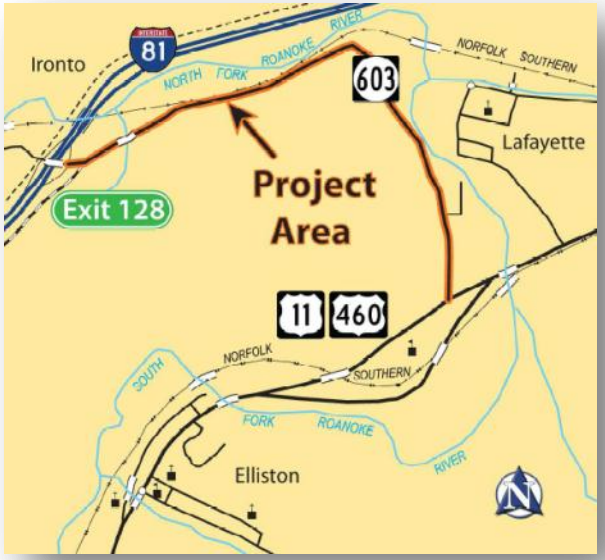


Figure 7. Excerpt from Draft New River Valley Regional Bikeway, Walkway and Blueway Plan

Route 603 (North Fork Road) –Elliston/Ironto Connector

The Virginia Department of Transportation is currently in the design public hearing phase for the Elliston/Ironto Connector. The purpose of this project is to reconstruct Route 603 to current standards to improve safety and capacity. The project will provide two 12-foot travel lanes with 8-foot shoulders (5-foot paved) with retaining walls. This project would provide a better connection between Route 11/460 and Interstate 81 at exit 128. A design public hearing was held on Thursday, May 19, 2011. Construction is currently scheduled to begin in Spring of 2014 and completed by late fall of 2015



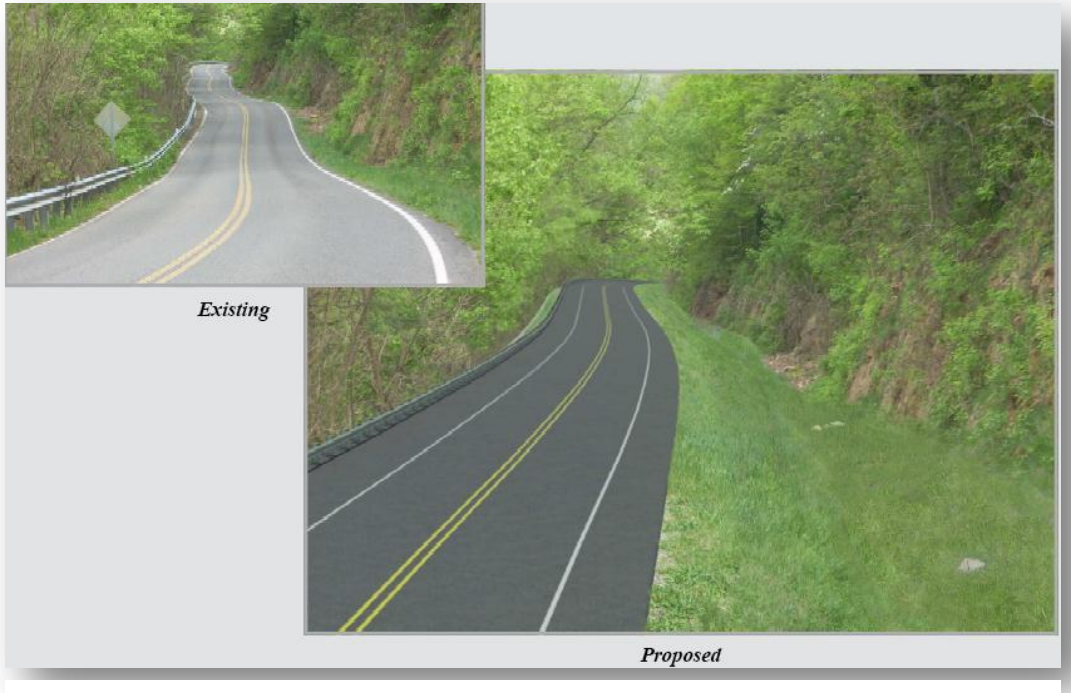


Figure 8. Photorendering of Elliston-Ironto Connector.

Proposed Roanoke Region Intermodal Facility

From 2006-2008, the Virginia Department of Rail and Public Transportation evaluated a number of sites in the Roanoke Region for construction of an intermodal facility that is part of a larger multi-state freight rail improvement project referred to as the Heartland Corridor Initiative. The Heartland Corridor is a designated "project of national significance." Through evaluation of the ten potential sites, DRPT has recommended the Elliston Site as the only feasible site for the development of a rail-served intermodal facility in the Roanoke region. The county opposed this project and filed suit to block the construction of the facility in this location. In November, the Virginia Supreme Court issued their opinion on the Elliston intermodal issue and ruled in favor of the state.

The County is still concerned that the construction of the intermodal facility project is not in character with the surrounding rural landscape and may also cause traffic and flooding problems for the local residents if constructed as proposed. Concerns have been raised by citizens about the size and number of trucks that will be generated by the intermodal facility and that the relocated Cove Hollow Road may be subject to flooding by the Roanoke River. To mitigate these concerns, the County suggests that the proposed entrance to the intermodal site enter route 11/460 at North Fork Road and that a traffic signal be installed on Route 11/460. In addition, an alternative emergency access across the railroad tracks should be provided for the residents living along that road should flooding occur along the roadway.

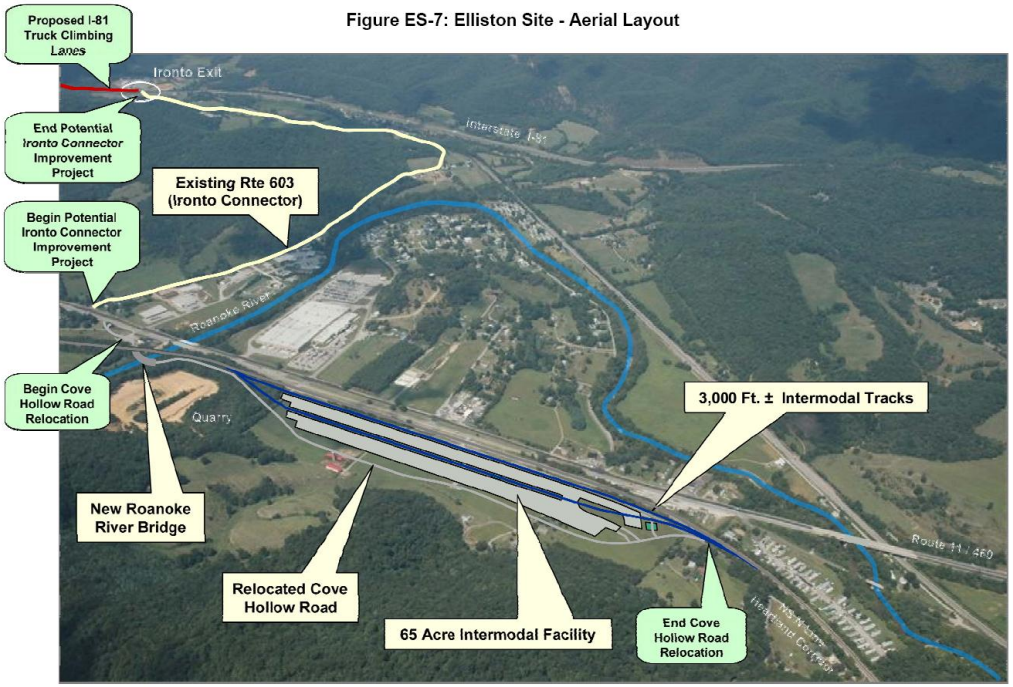


Figure 9. Proposed Intermodal Facility graphic from DRPT report.

Existing Employment

The map at the right shows the existing employment density in Montgomery County according to the US Census (2008). While the vast majority of jobs are concentrated in the Town of Blacksburg and the Town of Christiansburg, the area around the Elliston and Lafayette Villages and Ironto interchange also contains a significant amount of employment density. This is largely due to the presence of Rowe furniture and the industrial park.

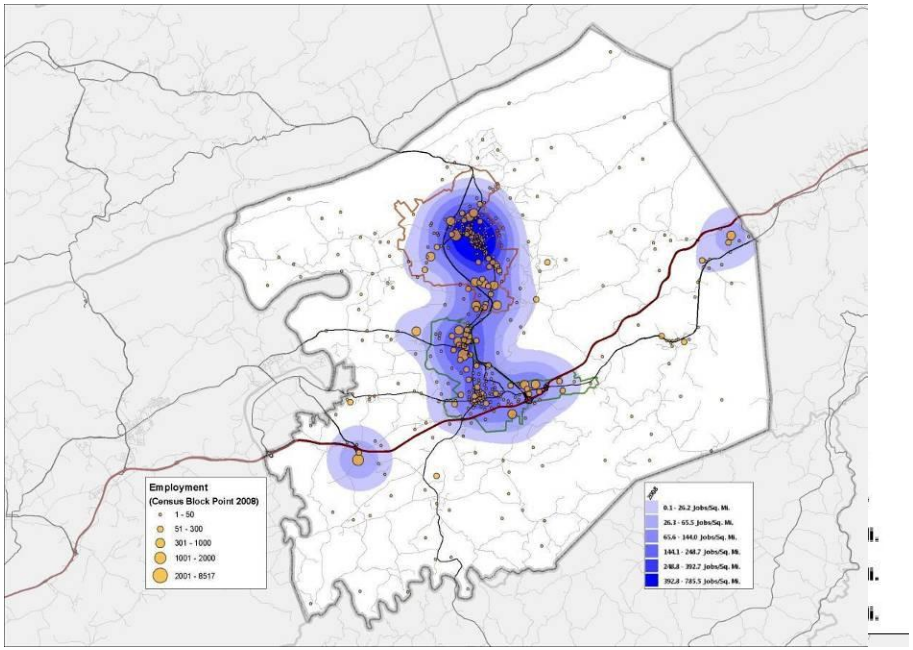


Figure 10. Montgomery County Employment Density.

Existing Transportation Conditions

The Route 11/460 corridor is classified by VDOT as a rural major collector facility through Montgomery County. Likewise, North Fork Road is also a rural major collector facility connecting Route 11/460 to I-81.

The Route 460 corridor statewide is of primary importance for the Commonwealth as it provides continuous four lanes of travel from Norfolk on the east all the way westward through the state into Kentucky.

The Route 460 corridor is also the location of the Norfolk Southern Heartland Rail Corridor, which is a joint effort project between three states, and FHWA to improve freight movement from the Port of Virginia into Ohio. The Heartland Corridor projects include relocation of Route 460 between Petersburg and the Port to increase travel capacity and freight movement capacity. As Route 460 moves into the western part of the state, the transportation capacity improvements are more focused on the movement of rail freight versus

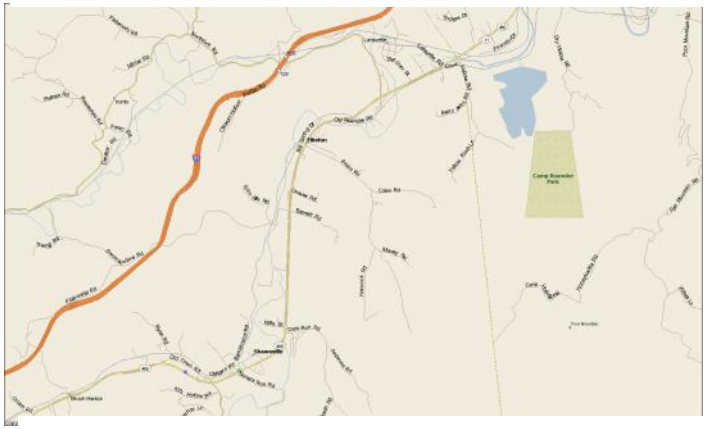


Figure 11. Route 460 parallels I-81.

automobiles and truck freight, especially due to the close proximity of I-81 to Route 460 west of Roanoke. However, the Route 460 corridor remains a critically important part of a regional and statewide transportation network, particularly as it relates to the need to provide travel capacity parallel to the I-81 corridor. From a local perspective, Route 460 provides mobility and access to the local communities throughout Montgomery County and neighboring jurisdictions.

At present, Route 11/460 through the study area has approximately 8,000 vehicles per day, assuming that I-81 is operational and not diverting traffic over and onto Route 460 due to an incident of crash situation. A volume of 8,000 vehicles per day (vpd) is well within the capacity of four lane road, which under ideal conditions could convey upwards of 40,000 vpd if needed.

North Fork Road is the other major roadway in the study area. This road presently has average daily traffic of approximately 1600 vpd, which is also well within the capacity that a two lane facility has available for automobile mobility.

North Fork Road is in the VDOT work program and will soon be reconstructed to an improved alignment and typical section. The reconstruction project is scheduled for year 2013 and will include safety improvements, minor realignment, and an improved typical section consisting of 12' lanes with paved 5' shoulders.

Within the study area, the intersection of North Fork Road and Route 11/460 is the only major intersection.

Figure 12. Proposed Heartland Corridor Route.

Figure 11. Existing intersection at Route 11/460 and North Fork Road.

According to a recent VDOT evaluation, there is at present ample capacity at this intersection and none of

the movements, under typical traffic conditions, suffer from excessive delay or queuing.

Within the study area, there are no on-street or nearby adjacent bicycle or pedestrian facilities along either North Fork Road or Route 11/460. However, there is a trail system that is planned that includes an extension of the Roanoke River trail. The County's Comprehensive plan includes discussion of the ViTL planning effort which describes trail and pedestrian connections throughout eastern Montgomery County.

At present there is no regularly scheduled transit service to the villages in eastern Montgomery. However, the Smartway Bus, which provides service from the I-81/Route 419 interchange area into Blacksburg, does traverse through the study section of Route 11/460, though does not currently have a stop in the Lafayette/Elliston area.

Corridor Growth and Future Traffic

As one of the key transportation corridors for the region, the traffic volumes along Route 11/460 are expected to increase in the coming years. The increase in traffic volumes will result from a combination of growth occurring throughout the larger region, and also from local contributions of traffic from new development. At present, there is little development proposed for Elliston or Lafayette, with the exception of the proposed intermodal center. However, as called for in the future land use map in the Comprehensive Plan, and as discussed earlier in this document, there are both favorable policies and developable land that could provide this local growth in the future.

Considering that the area will likely see new growth in the coming 20 to 30 years and beyond, an effort was made to estimate additional new traffic growth that might occur under a hypothetical growth scenario for the year 2033. The scenario could be described as adding 300,000 s.f. of light industrial (perhaps something the size of Rowe Furniture), constructing 75 new homes, building a medium size grocery store and mix of other small shopping center retail (total of 75,000 s.f.), and a convenience store with fueling over the next two or three decades in the corridor. Based on this scenario, using standard trip estimation methods, we might expect approximately 10,000 additional vehicle trips to be generated or attracted to the study area in this time frame. The graphic on the following pages illustrates the resulting traffic projections based on the combined "local" growth area traffic coupled with the growth in regional traffic volumes.

Based on these reasonably aggressive growth assumptions, it appears that the four lane section for Route 460 would still continue to have sufficient capacity for the future traffic volumes in this time frame. The intersection of North Fork / Route 460 will need to be monitored relative to safety and capacity.

It should be noted that during the stakeholder meetings, public input was received regarding the desire to extend Cove Hollow Road to the west and provide grade separation between the road and railroad tracks. If extending the road were to become a reality, then there would be an opportunity to provide safer access from Route 460 and potentially eventually extend the road further west to connect to Old Route 11, thus creating a parallel roadway to accommodate local growth while providing a comfortable walkable/bikable connection. The initial plans by VA DRPT show Cove Hollow Road to connect to Route 460 across from Enterprise Drive. Public input gathered during this planning process requested that the connection be made through Old Route 11 to North Fork Road

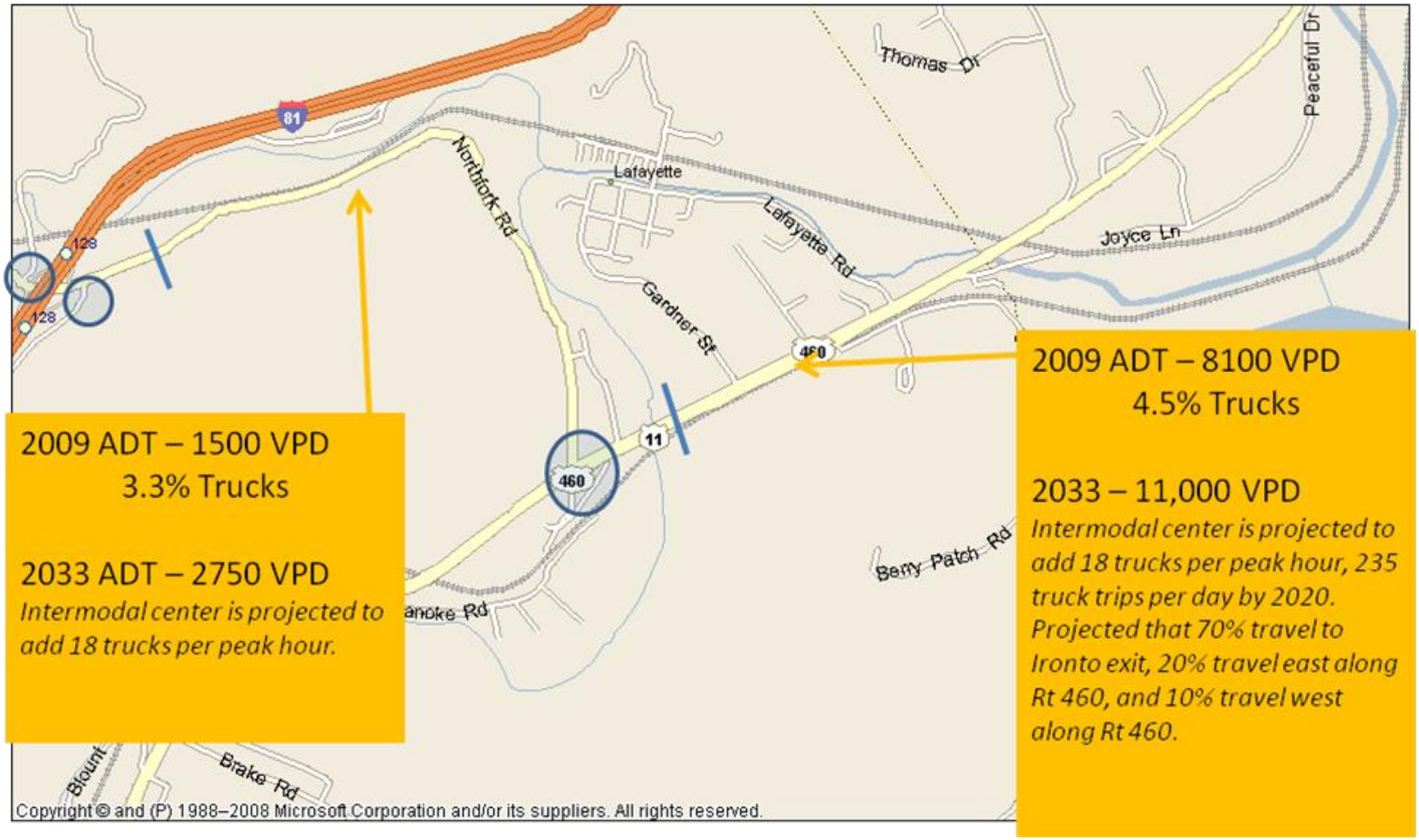


Figure 12. Projected Year 2033 Traffic Data (Regional Growth and Proposed Intermodal Center)

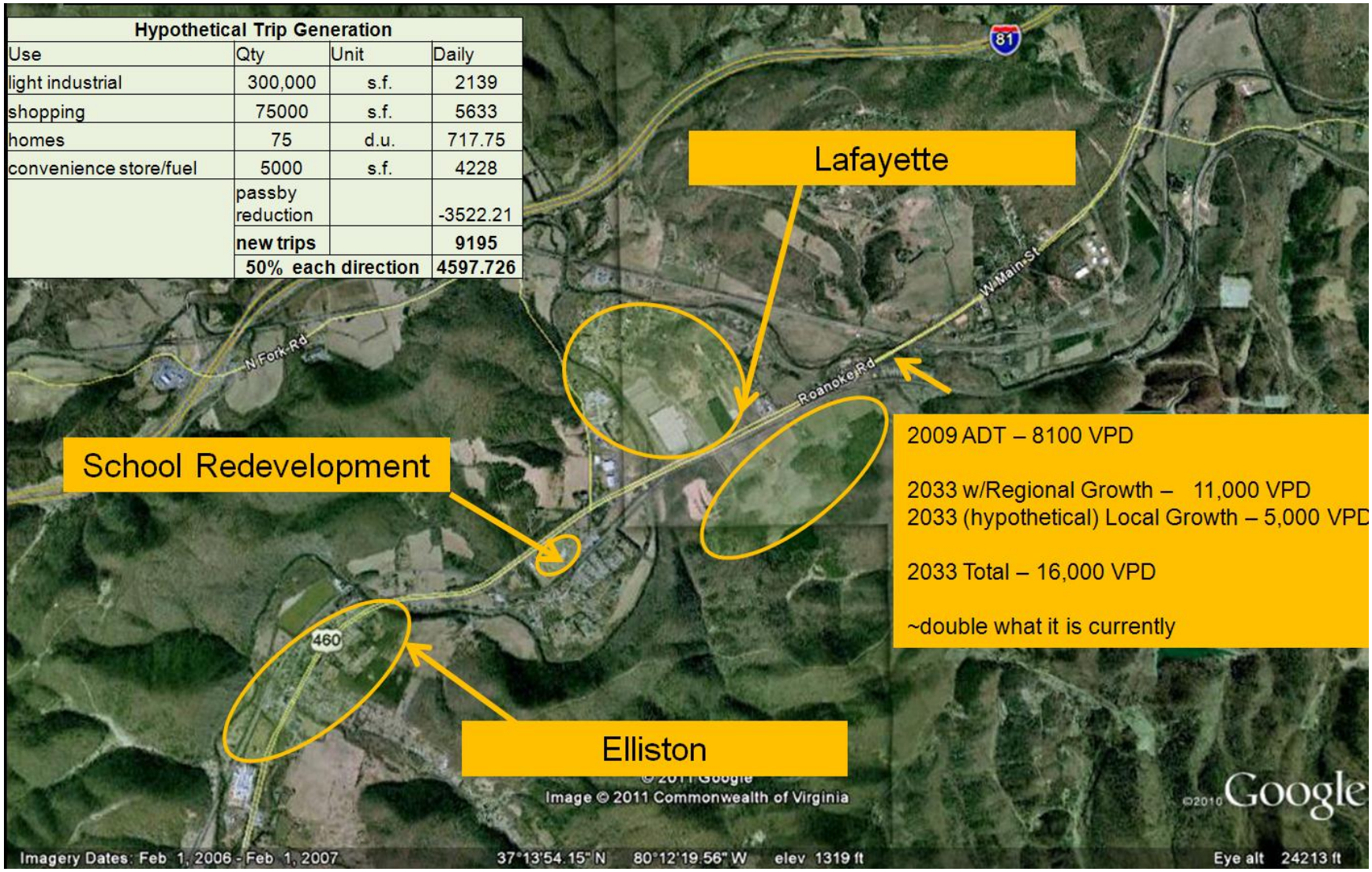


Figure 13. Regional and Potential Future "Local" Traffic Growth

CONCEPT PLAN

Overall Concept

Input from the Work Sessions

The following conceptual planning maps and principles were presented to the public, county Planning Commission and county and agency staffs in a series of work sessions on August 10, 2011. Based on the input, comments and affirmation of these basic concepts at these work sessions, they have been developed into the overall corridor plan for the Route 11/460 corridor.

Planning Concepts

The overall goal of this study is to develop an updated **long range vision** for the Route 11/460 Corridor in the area of Lafayette village. The overall concept for the area includes a Corridor Design Plan, which describes the design character of the corridor. In addition, this study recommends specific refinements to the future land use map in the Elliston and Lafayette Village Plan, as well as slight refinements to the recommendations from the VITL plan for this portion of the corridor.

These recommendations were based on all of the input that was received from various agency staff, property owners and community stakeholders, both in the initial kickoff meetings in June, and in the follow up work sessions and public meeting in August.

Land Use Concept

The Route 11/460 Corridor has a long term opportunity to enhance the economic development potential for the eastern portion of Montgomery County. At the same time, future economic growth in the area should maintain the scenic character of the corridor as an appropriate eastern gateway into the county. To better support this vision for the corridor, the Land Use Concept, shown on the following page, recommends some refinements to the current Future Land Use Plan articulated in the Elliston and Lafayette Village Plan. These recommended refinements to future land uses in the area include:

- *Revising Mixed Use Industrial to Planned Light Industrial/Commercial.* This refinement suggests revising the current future land use district that emphasizes primarily industrial use to a more inclusive mixed use district called "Planned Light Industrial/Commercial." As described below, the intent of this district is to encourage modern clean industrial and commercial businesses that can bring high quality employment to the corridor.

- *Refining standards for Mixed Use Commercial*. This refinement recommends including additional community design and compatibility standards for commercial uses in the corridor.

- *Refine Standards for Medium Density Residential*. This refinement recommends including additional

community design and compatibility standards for medium density residential uses in the corridor.

- *Refine Standards for Low Density Residential.* This refinement recommends including additional community design and compatibility standards for low density residential uses in the corridor.

The Land Use Concept provides more detailed design principles for each of the land use districts. The overall Land Use Concept incorporates a mixture of well-designed, commercial and industrial areas along the Route 11/460 frontage, while providing appropriately scaled and designed residential uses as the transition between existing residential and proposed light industrial/commercial areas.

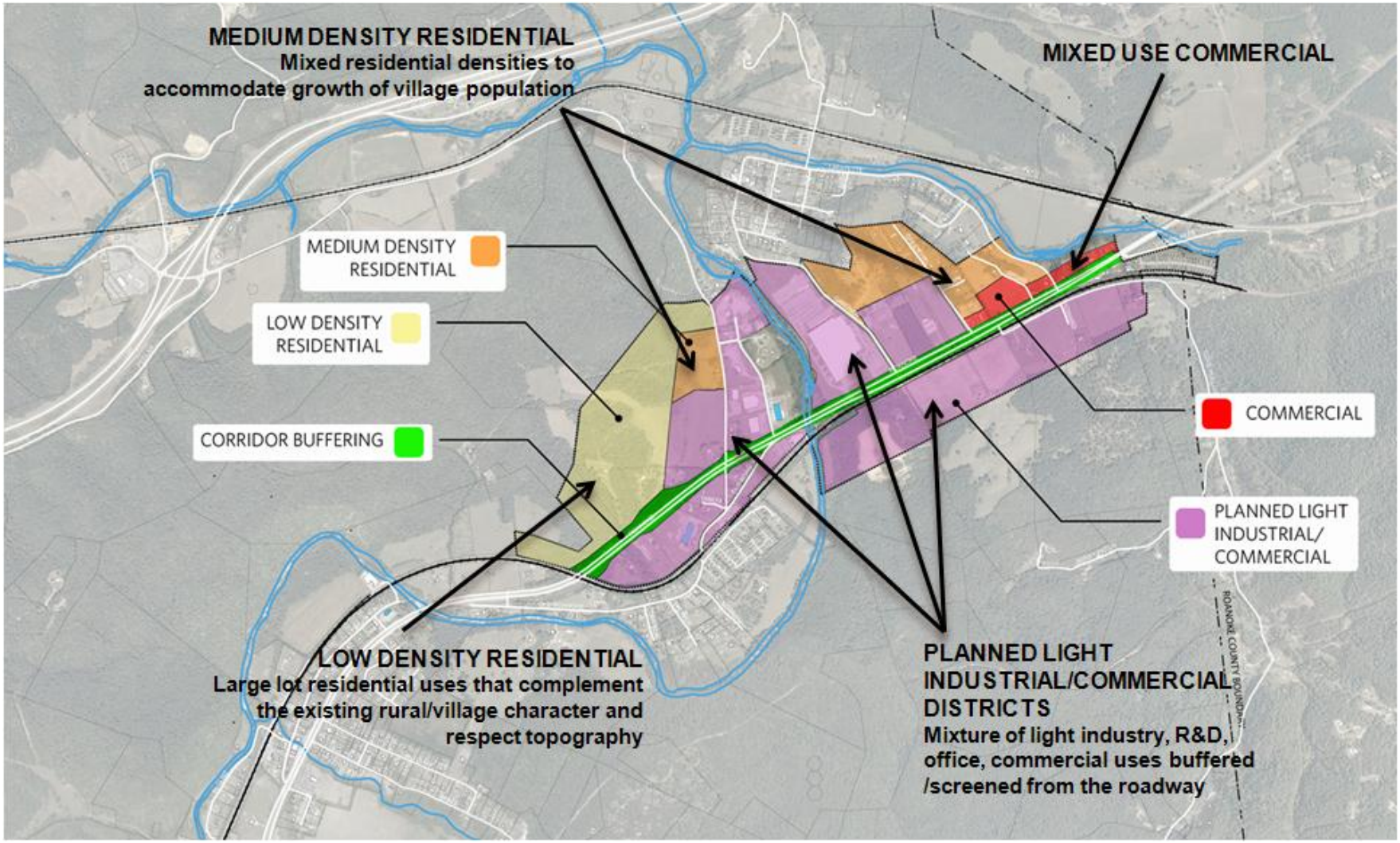


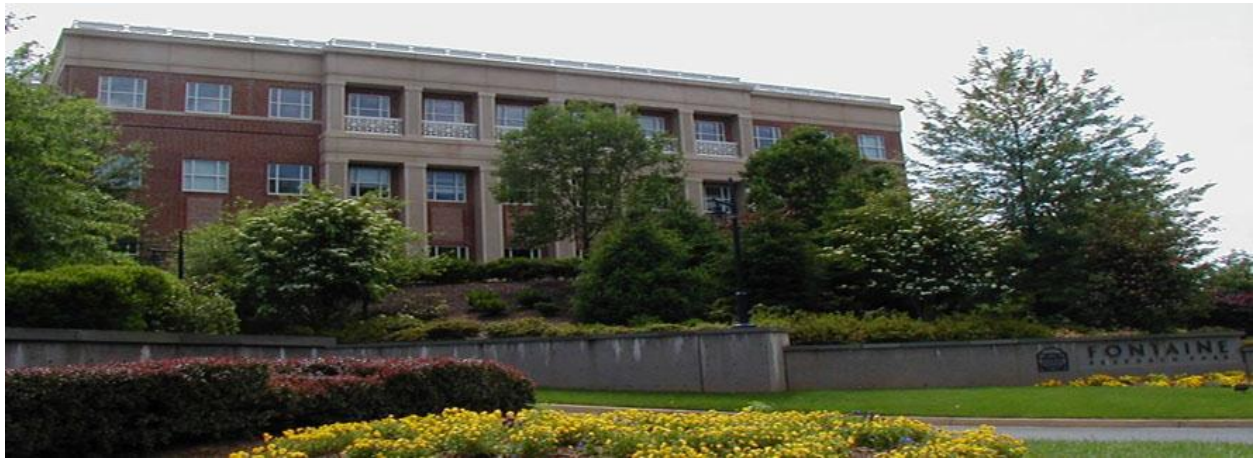
Figure 14. Diagram of land use concept for the Route 11/460 Corridor

Land Use Concepts by District:

The following diagrams and photographs describe the general land use concepts and design principles for each proposed future land use district in the Corridor.

Planned Light Industrial/Commercial

- Provide opportunities to concentrate employment to keep working population in the village/region
- A combination of light industry, warehousing and office uses, screened from adjacent areas
- Typical uses might include light manufacturing, research facilities; flex space, business parks and nonresidential planned developments.
- Buffered from surrounding development by transitional uses or landscaped areas that shield the view of structures, loading docks, or outdoor storage
- Development should be oriented away from sensitive natural resources, such as floodplains and ponds to minimize the environmental impacts of new development.
- Vehicular, bicycle, and pedestrian links should extend into the surrounding development.


FONTAINE

Mixed Use Commercial

- Primarily retail commercial/employment mixed uses - compatible with existing development character.
- Redevelopment and infill is encouraged.
- Low rise buildings (1-2 stories) that are oriented to face the roadway with parking areas to side or rear.
- Landscaped open space, street trees and parks.
- Provide external connections to the broader trail network and greenway system.

Medium Density Residential

- A combination of mixed density residential uses (includes small lot subdivisions consisting of single family detached homes, townhouses or duplexes) that incorporate a walkable community design
- Pedestrian circulation as an integral part of the development
- Provide neighborhood parks, squares, and greens
- Public and civic uses such as places of worship, daycares, and community centers
- Off-street parking located to the rear buildings.

Low Density Residential

- Primarily single family detached homes on large lots
- Buffered from surrounding development by topography or open space
- High degree of separation between buildings
- Smaller lots may also be appropriate if clustered and buffered with open space

Corridor Design

Recommended changes to ViTL Plan

The Corridor Design concept integrates the recommendations from the 2007 VITL plan with some refinements to better address regional connectivity and safety concerns:

1. The trail system is extended along portions of the Roanoke River to create a continuous regional greenway into Roanoke County

2. The plan recommendation to incorporate paved shoulders and buffered sidewalks along a portion of Route 11/460 has been refined to include shared bicycle and pedestrian facilities within a buffered trail system. This would provide direct access between key destinations.

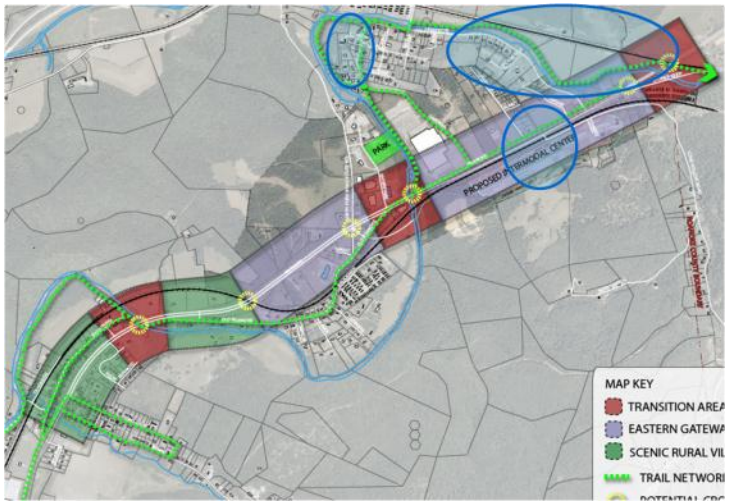
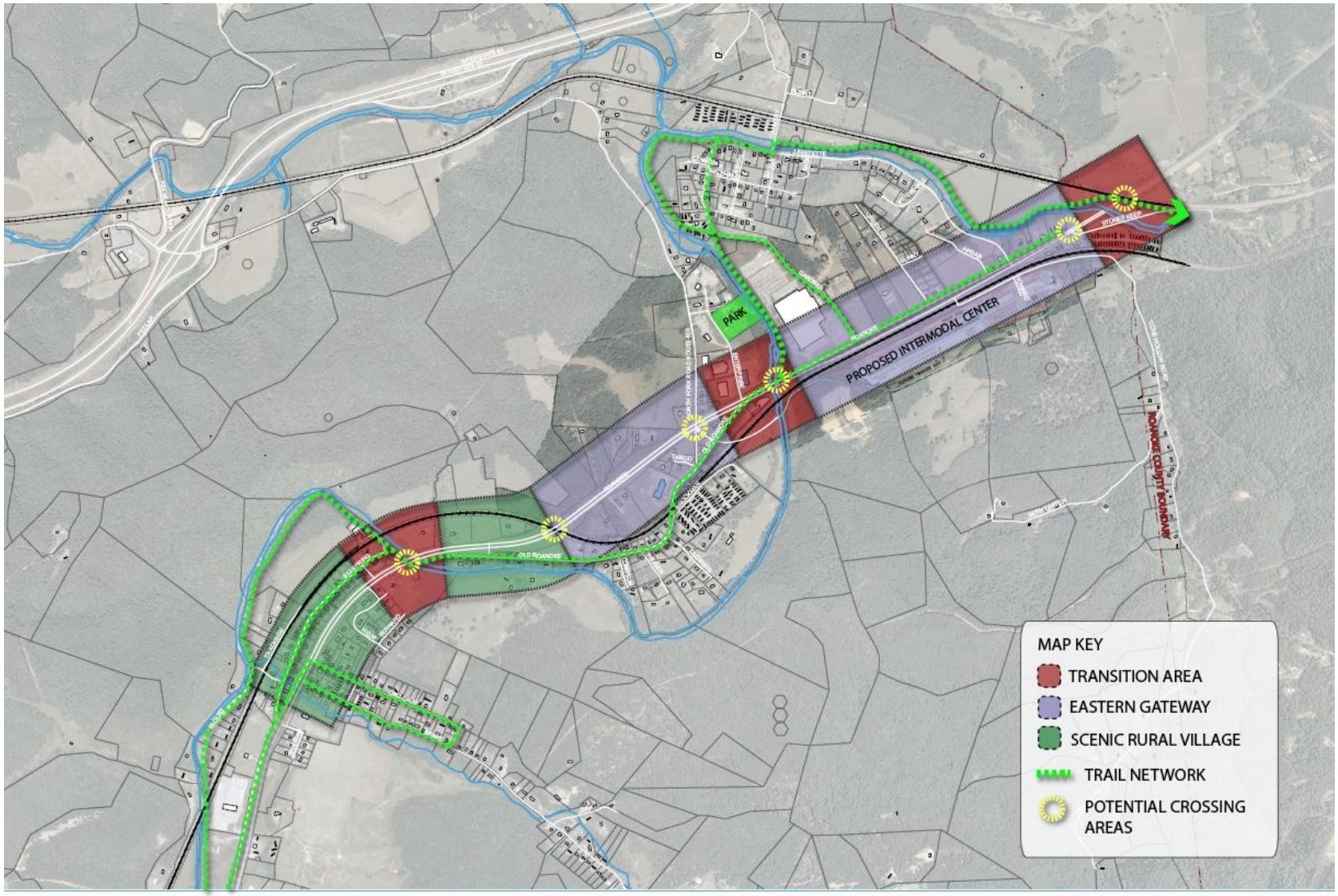


Figure 15. Proposed Changes to VITL Plan

Proposed Corridor Design Plan

The Corridor Design Plan, shown on the following page, summarizes the recommendations for landscaping, buffering, signage and general design character for this portion of the Rt. 11/460 corridor. The corridor has been divided into segments according to proposed design character, and the recommendations for each segment are described in the following section.


PARK
PROPOSED INTERMODAL CENTER
ROANOKE COUNTY BOUNDARY
MAP KEY
TRANSITION AREA
EASTERN GATEWAY
SCENIC RURAL VILLAGE
TRAIL NETWORK
POTENTIAL CROSSING AREAS
0
1,000
2,000
4,000 Feet

Typical Corridor Design: Eastern Gateway

This section of Route 11/460 is already a four lane divided facility that operates at high speeds (55mph). The Corridor Design Concept for this portion of the corridor is to reinforce the area as a scenic eastern gateway to the county. The new development projected for the corridor should not be hidden from view but should be appropriately visually framed with wide front building setbacks and formal landscaping along the corridor. Signage should be low and oriented to the automobile, but designed so that it does not visually clutter the roadway. The concept retains the rural (open section with swales and shoulders) roadway design and enhances it with a landscaped median and landscaped buffers along the road edges, as well as a shared use trail set back from the roadway. A new trail alignment is proposed in the Lafayette area to continue the Roanoke Greenway along the river.

The landscaping concept for this section of the corridor is illustrated in the photo-visualization under "Gateway Character" below. It includes a hardy ornamental tree species such as Crepe Myrtles, arranged in irregular groupings along the edges of the corridor. These should be supplemented by groupings of low evergreen shrubs to form interspersed areas of visual interest and color along the roadway edges without completely screening new development. New buildings should be compatibly designed with the scenic rural quality of the surrounding area and should be oriented with their parking lots to the rear whenever possible.

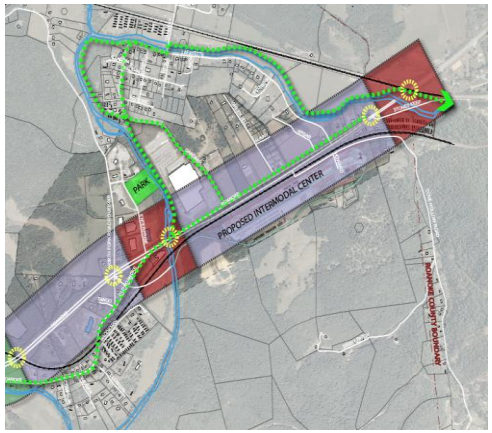


Figure 16. Key Map showing eastern gateway in purple.

Typical Corridor Design: Village/Rural Scenic

The section of roadway on the edge of both of the villages will also be a four-lane divided facility with a rural (open section) roadway design. It is intended to support the rural and scenic qualities that surround the County's small villages. To that end, preserved vegetation or informal tree plantings within a wide buffer help maintain the rural character. Rather than formal plantings in the median or roadway edges, new landscaping should be informal and should not obscure the distant scenic perspectives that make this portion of the corridor so attractive. Biking and walking should accommodated on local parallel roadways, such as the old Route 11 alignment, rather than directly along the 11/460 roadway edges.

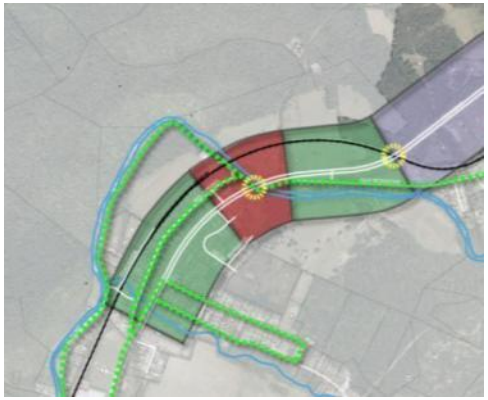


Figure 17. Key Map showing Village/Rural Scenic in green.

Typical Corridor Design: Transition Area

The transition areas on the Corridor Design Plan are areas that mark focal points on the corridor. They should be designed to add visual interest and wayfinding information to passing travelers. Signage and landscaping at the transition areas serve as welcoming features. Setbacks and landscaping are varied, but reinforce the desire to reduce speeds in these areas. The transition areas also serve as potential areas where trail crossing or nearby access points are provided. There are three transition areas on the plan indicated as follows:

Area 1 – at the eastern county boundary – signage could highlight the Montgomery County boundary as well as nearby potential access to the Roanaoke River Greenway

Area 2 – at the Enterprise Road intersection – signage could announce the county park facilities and Lafayette trail system nearby, as well as local history

Area 3 at the entrance to Elliston – signage could announce the village entry, nearby trails and the Pedlar Hills natural area.

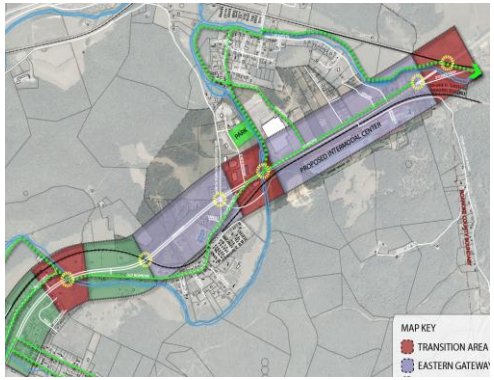


Figure 18. Key Map showing Transition Area in red.

Gateway Character

The following pages illustrate how the corridor might evolve over the long term with the improved landscaping and screening recommendations contained in the corridor design concept. It is important to recognize that the concepts on the following pages are not specific construction recommendations and should be seen as illustrative concepts only. The images on this page show a "before and after" condition of re-landscaping the corridor just east of Rowe Furniture (looking east). It incorporates groupings of low shrubs and crepe myrtles to add visual interest and a landscaped gateway character.

The specific implementation of these recommendations would need to be coordinated among the county, VDOT, the railroad and adjacent property owners. The landscape enhancements could be incorporated into either the rights of way or adjacent properties as improvements are made. Funding could either come from proferred private development or from grant-funded corridor improvement projects.

Figure 19. Image Above: Existing view looking east toward Roanoke County. Image Below: Proposed View of corridor applying Eastern Gateway Corridor Design Concept.

The images on the this page show a recommendation for screening and buffering enhancements for the proposed intermodal facility. The view at the top of the page shows existing conditions. The view at the bottom of the page shows proposed screening along the railroad tracks that would combine evergreen and deciduous trees and lower shrubs to create a visually interesting landscaped buffer, rather than a purely opaque screen.

Implementation of this type of enhancement would need to be closely coordinated with the county and the potential developer of the site. This type of screening is recommended because of the visual prominence of the site and the rising topography that would make any development in this location highly visible from the corridor.

Figure 20. Existing view of proposed intermodal site. Image below: Site screening recommendations applied to proposed intermodal site.

TRANSPORTATION RECOMMENDATIONS

Corridor Traffic Operations

As noted in the preceding sections, there is currently sufficient capacity (under normal traffic conditions) along Route 460 and also North Fork Road. Given the current and projected traffic volumes, in foreseeable the future it is anticipated that both roads will continue to have sufficient capacity for the vehicular traffic demand.

At present, Route 460 is posted 55 mph through the study area. In the future, there could be a justification for reducing the speed limit to 45 mph, for example, at a time when the adjacent development character changes substantially, when safety conflicts become more numerous, and/or when there becomes a higher demand for walking and bicycling along the corridor. An engineering study will need to be conducted at such time to determine if this reduction in speed is justifiable.

Access Management

Access management programs seek to limit and consolidate access along major roadways, while promoting a supporting street system and unified access and circulation systems to access development. The result can be a roadway that functions more safely and efficiently for its useful life, which ultimately results in a more attractive and economically stronger road corridor.

Access management policies have been evolving nationally over the past 15 years. In 2007, the Virginia General Assembly enacted legislation requiring the Virginia Department of Transportation to develop and enforce a statewide policy that provides standards for regulating driveway intersection spacing and median crossover locations along state maintained roadways. The overall goal of the policy is to maximize safety and mobility along Virginia's roadways.

The tables on the following page are excerpted from the VDOT Access Management Policy and Roadway Design Manual and show the current applicable access standards that would apply to new development or redevelopment along the Route 11/460 corridor.

As the Route 11/460 Corridor continues to grow and develop, it will be important to find opportunities to consolidate entrances for parcels fronting the roadway, and also develop a roadway network that effectively provides access while conforming to VDOT's access management policy.

The graphic below illustrates the inventory and spacing of existing median crossovers.

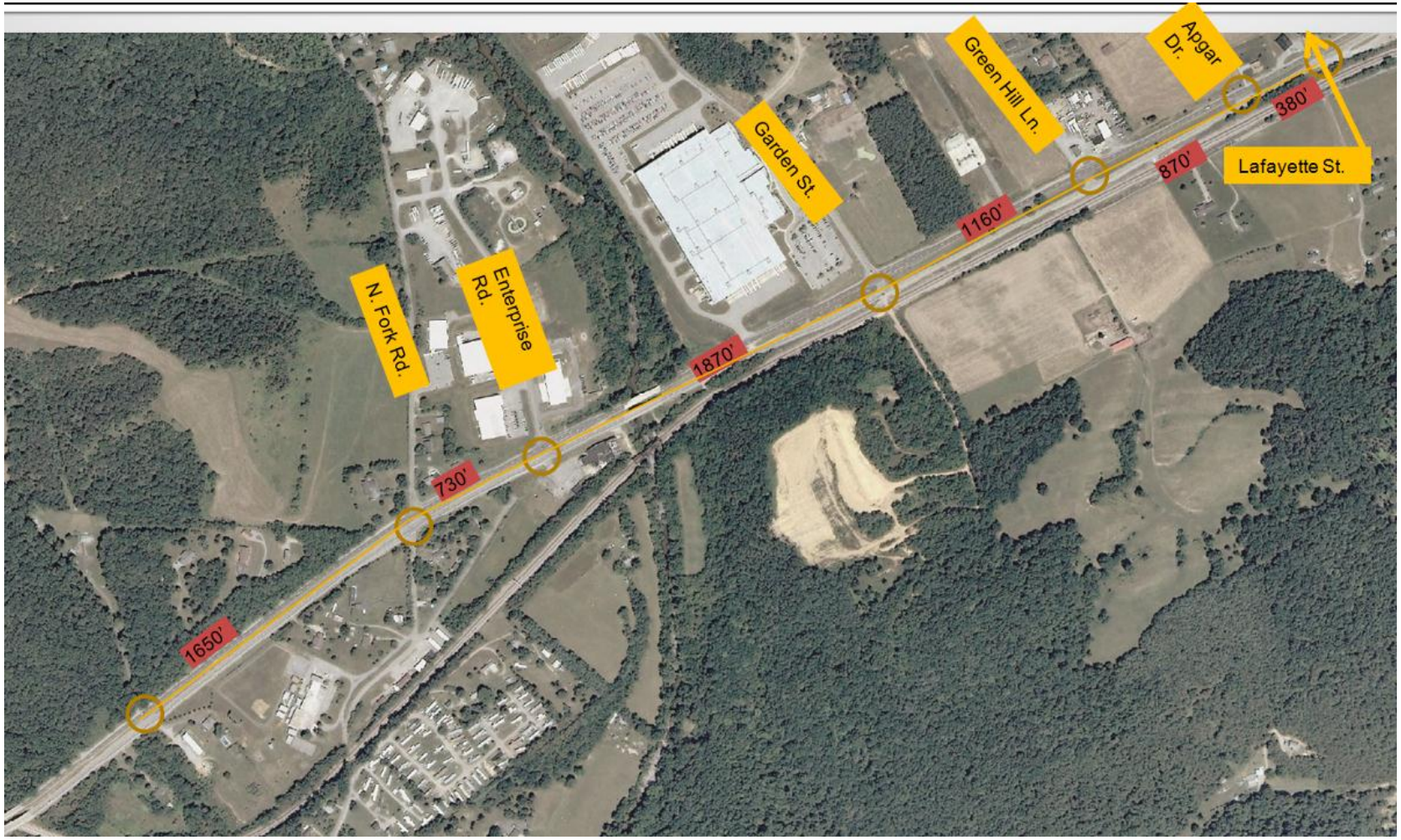


Figure 21. Diagram of existing median breaks along Route 11/460.

Figure 22. Excerpt from VDOT Access Management Standards - Source: Appendix G. VDOT Roadway Design Manual

VDOT

Access Management Regulation 24VAC30-120 C 3
Appendix G Table 2-2

Minimum Spacing Standards for Commercial Entrances, Intersections, & Crossovers

Highway Functional Classification	Legal Speed Limit (mph)	Centerline to Centerline Spacing in Feet		
		Signalized Intersection Crossovers	Unsignalized Intersection/Crossover & Full Access Entrance ①	Partial Access One or Two Way Entrance ②
Urban Minor Arterial	≤ 30 mph 35 to 45 mph ≥ 50 mph	1,320 1,320 1,760 2,640③	660 660 1,050	270 305 495
Urban Collector	≤ 30 mph 35 to 45 mph ≥ 50 mph	660 660 1,050 1,320	440 660 440 660 660 1050	200 250 360
Rural Minor Arterial	≤ 30 mph 35 to 45 mph ≥ 50 mph	1,760 1,760 2,640	1,050 1,050 1,320	270 375 510
Rural Collector	≤ 30 mph 35 to 45 mph ≥ 50 mph	1,320 1,320 1,760	660 660 1,320	270 305 425

① Roundabouts separated from other intersections by the unsignalized intersection standard; from other roundabouts by the partial access entrance standard

② Length of right turn lane by speed or stopping sight distance (AASHTO)

③ Spacing reduced from proposed spacing standard

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Going forward into the future, regulating access in accordance with the VDOT access management policies will be critically important towards preserving the capacity and safety of Route 11/460 while effectively encouraging shared access and an efficient system of adjacent roadways that will form the basis of the local road system. When possible through the site plan review process, access points (entrances) for parcels that currently front of Route 11/460 should be reduced, combined, or closed, and access should be provided through adjacent parcels or via a new road network.

East of the North Fork Road intersection there are currently multiple median openings whose spacing does not conform with the current VDOT access management standards. At present there does not appear to be a known safety concern, but in the future as additional development occurs and traffic volumes grow there may be a need to re-consider allowing full access at each of these existing median openings.

To the west of the North Fork Road intersection with Route 460, the spacing to the first full median opening is approximately 1650'. This spacing conforms to the access management criteria. However, with the redevelopment of the school site, there may be a need to provide access via a median opening to a new commercial entrance directly from Route 460 into the school parcel. Since the access management criteria calls for a minimum 1050' spacing, this new median cut would not be in conformance with the current standards. In order to successfully petition for access from Route 11/460, a traffic study would need to be performed to document the expected number of site trips and resulting traffic impacts, including impacts relative to proposed access scenarios.

One strategy that could be considered to comply with the access management requirements would be to construct the opening to only allow left turn movements from Route 11/460, thus not allowing left turn movements from the school site. This helps to minimize the conflict points while still providing full ingress to the site, which is often critically important to the viability of commercial interests. The egress traffic desiring to turn left onto westbound Route 11/460 would be forced to travel a short distance to the east and make a U-turn at the North Fork Road intersection. This type of median configuration is illustrated in the graphic on the following page.

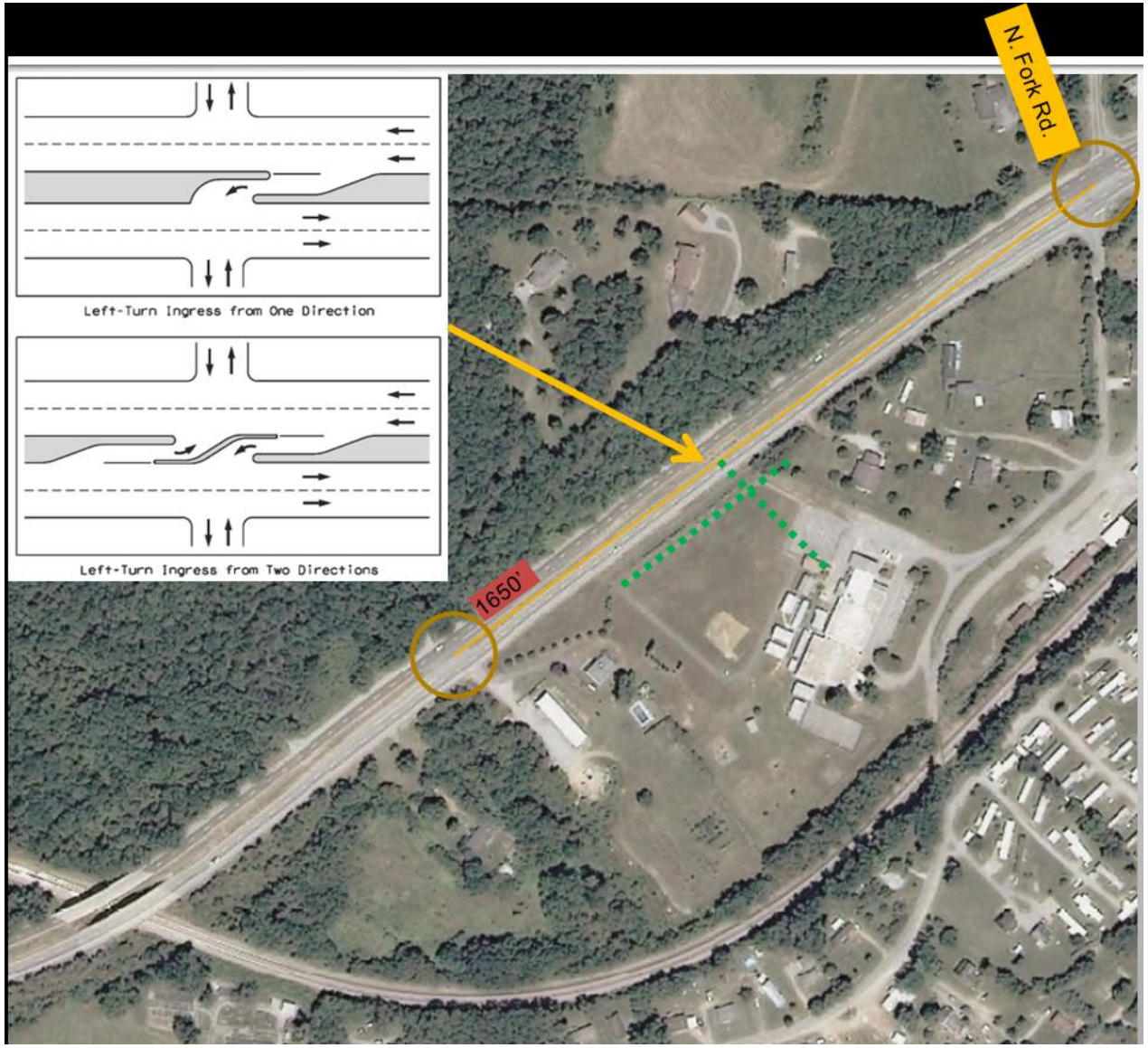

Figure 23. Future Access Strategy

MULTIMODAL CONSIDERATIONS

Trail User / Pedestrian Crossings

As previously noted, there are several proposed trail and recreational facilities within the village area. Also, as discussed in the ViTL plan, there may be a need in the future to provide safe crossing across Route 460, either at grade or through grade separation. With the posted 55 mph speed limit, the crossing designs and considerations are of paramount importance relative to pedestrian safety.

This issue was discussed during the current planning process and the workgroup participants expressed a strong design to separate the pedestrian crossing movements away from the vehicles via grade separation. This could be possible by constructing a crossing "shelf" beneath the existing bridges along Route 460. This would require engineering and environmental analysis, but would be a preferred condition for providing safe crossings of Route 460. A conceptual drawing is provided in the following graphic images.

Also discussed was the potential future need to provide an at-grade pedestrian crossing. This could be accomplished if a traffic signal is ever warranted at the North Fork Road intersection, or via other innovative pedestrian crossing methods, such as those recently accepted by FHWA as an approved traffic control method for at-grade crossings.

It is important to note that national level research, and adopted VDOT policies suggest that a simple marked crossing is not a sufficient method for providing a safe crossing once volumes or travel speeds reach certain thresholds. For a condition where the speeds are above 45 mph, a simple marked crosswalk is not recommended. An excerpt from the current VDOT planning criteria is provided on the following page.

For an at-grade crossing of a high speed roadway, a more robust crossing configuration is required, which could include physical road design features that signal to the driver that they are entering a zone where pedestrians are to be expected. Traffic control devices are also needed that can provide a solid warning, and then provide the ability to use a red light indication to stop traffic.

If an at-grade crossing is desired in the future, an engineering study can also be performed to examine the potential use of a High Intensity Crosswalk Beacon, referred to as a HAWK configuration. FHWA now recognizes this configuration as an accepted method for traffic control at mid-block crossings, when supported by an engineering study.

Figure 24. A potential trail underpass along the Roanoke River

Figure 25. Images of a HAWK Beacon as used on a high speed four lane roadway in Maryland

Transit

At present, the County's eastern villages are not serviced by transit. However, as residential and employment growth occurs in the area, there may be a desire for periodic transit service to areas such as Elliston and Lafayette. Access to transit could potentially be accomplished via adding a new stop to the Smart Way bus, or via on-demand paratransit.

IMPLEMENTATION

During the public input process for this area plan, participants were asked to describe the most important implementation steps needed to achieve the vision. The full results of all public input can be found in the appendix. Several general implementation priorities emerged from this process:

- *County should rezone & sell school site.* This could provide an effective potential catalyst for other development. Development of the school site should exemplify the design and land use recommendations contained in this plan.

- *Use this plan to respond to intermodal site potential.* This plan establishes an effective framework for how this portion of the corridor should look and function in the future. The county should use the principles and policies in this plan in negotiations with either DRPT or any other future potential developer of this key site to ensure that the visual and transportation impacts of the development on the area are mitigated.

- *Pursue funding for trail improvements.* The county should explore various grant and funding programs (such as VDOT bike/ped enhancement funding and/or CDBG funds) to implement the trail improvements recommended for the area over time. The county may also be able to work with VDOT to consider adding to the Rt. 603 improvement project for key trail enhancement projects in the area.

- *Develop recreational amenities at the public park.* Over time, the county should seek to enhance recreational opportunities at the park, including expanding ball fields, trailhead and put-ins and picnic facilities.

- *Adopt Corridor Plan as basis for future development framework .* As rezoning applications are put forth, the county should seek opportunities to solicit pro-rata share contributions for needed pedestrian or roadway improvements. This could come in the form of right-of-way dedications for future road connections.

APPENDIX

Work Session Summary Materials